

Cancer mortality in Italy, 2003

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ABSTRACT

Aims and background. This report provides data and statistics for cancer mortality in Italy in 2003, updating previous work on the issue.

Methods. Cancer death certification numbers by cause and estimates of the resident population in 2003, stratified by sex and quinquennium of age, were obtained from the World Health Organization database. In 2003, cause of death encoding was changed from the 9th to the 10th Revision of the International Classification of Diseases (ICD). All cancers and groups of cancers, classified according to the 10th revision of the ICD, were grouped into 30 categories, besides other and unspecified sites. Mortality rates were age-standardized on the world standard population in five-year age groups up to 80-84 years and 85+.

Results. The total number of cancer deaths in Italy was 167,144 in 2003 (96,127 men and 71,017 women), with age-standardized death rates of 160.63 and 89.32 per 100,000 inhabitants, respectively. Lung cancer mortality in men confirmed the favorable trend, with rates of 43.72/100,000 and 51.68/100,000 in the all ages and truncated groups, respectively. Most other tobacco-related cancers were also declining in men but not in women. Cancers of the female breast and uterus (cervix and corpus) continue to decrease, with overall rates of 17.11/100,000 and 3.71/100,000. Declines were also observed in stomach and testis cancers. A few cancer sites such as prostate and multiple myeloma appeared to rise, but these trends were mainly due to the ICD change and the stricter age-standardization categories (80-84 and 85+ instead of 80+).

Conclusions. Trends in cancer mortality remained favorable for most major cancer sites, mainly in men for tobacco-related cancers. Due to the classification changes brought about by the change of ICD and the stricter age standardization, the present mortality rates should only be compared to previous ones with due caution.

Introduction

Overall cancer mortality increased in Italy, as in most western European countries and North America, up to the late 1980's. Thereafter it declined by over 14% in men and 10% in women, mainly due to a fall in tobacco-related neoplasms in men, but also in several other cancer sites, including stomach and colorectum for both sexes, breast, uterus and prostate, testis, leukemia, Hodgkin's lymphomas and a few other neoplasms amenable to treatment¹.

In this paper, we update Italian cancer mortality data and statistics to 2003. Italian mortality data changed its International Classification of Disease (ICD) encoding from the 9th to the 10th revision^{2,3}, which introduced a number of changes that affect some cancer sites comparability with previous versions of the ICD. We also adopted a more detailed age standardization (80-84 and 85+) to account for population ageing.

Key words: cancer, mortality, Italy, ICD-10.

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Materials and methods

The materials and methods in this report are similar to those described in previous publications^{1,4-6}. Briefly, cancer death certification numbers by cause and estimates of the Italian resident population in 2003, stratified by sex and quinquennium of age, were obtained from the World Health Organization database⁷. All cancers and groups of cancers, classified according to the standard ICD 10th Revision³, were grouped into 30 categories, besides other and unspecified sites. All intestinal sites, melanomas and non-melanomatous skin neoplasms, all uterine neoplasms (cervix and corpus), all brain and nervous system neoplasms, all leukemias, and all non-Hodgkin lymphomas were grouped together.

Eight tables containing the following statistics were produced: number of deaths, crude and age standardized (world standard population with weighting for 19 age groups 0, 1-4 ... 80-84, 85+) death rates, and percentage of cancer deaths for all ages and the 35-64 years truncated age groups (Table 1 males, Table 2 females); age-specific death rates for both sexes and age quinquennia from 0-4 to 80-84 and 85 years and over (Table 3 males and Table 4 females); number of registered deaths per cancer group and total neoplasms by sex and age group (Table 5 males and Table 6 females); percentage of cancer deaths for each cancer group by sex and age group (Table 7 males and Table 8 females). In previous reports^{1,4-6}, we used 18 five-year age groups, whereas in this study we used 19 age groups (up to 75-79, 80+ instead of 80-84, 85+).

Table 1 - Cancer death certification rates per 100,000 males, Italy, 2003, for various cancers or groups of cancers/Tassi di certificazione di morte per 100.000 uomini, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	ICD-10	All ages/Tutte le età				Truncated/Troncato 35-64			
		Certified deaths N°	Crude rate	World standard rate	Certified deaths %	Certified deaths N°	Crude rate	World standard rate	Certified deaths %
Mouth or pharynx/Cavo orale e faringe	C00-C14	2033	7.28	4.03	2.11	882	7.56	7.32	4.10
Esophagus/Esofago	C15	1446	5.18	2.61	1.50	475	4.07	3.87	2.21
Stomach/Stomaco	C16	6381	22.86	10.43	6.64	1341	11.50	10.98	6.23
Intestines (colon and rectum)/Intestino (colon e retto)	C17-C21,C26	10932	39.16	17.75	11.37	2253	19.32	18.42	10.47
Liver/Fegato	C22.0-C22.7	2751	9.85	4.77	2.86	733	6.29	5.96	3.41
Gallbladder and ducts/Colecisti e dotti	C23-C24	1299	4.65	2.08	1.35	243	2.08	1.96	1.13
Pancreas/Pancreas	C25	4274	15.31	7.45	4.45	1193	10.23	9.71	5.54
Other digestive sites/Altri digerente	C48	199	0.71	0.35	0.21	58	0.50	0.47	0.27
Larynx/Laringe	C32	1712	6.13	2.99	1.78	484	4.15	3.96	2.25
Lung/Polmone	C33	25833	92.53	43.72	26.87	6404	54.92	51.68	29.77
Pleura/Pleura	C38.4,C45.0	834	2.99	1.46	0.87	238	2.04	1.94	1.11
Other respiratory sites/Altri respiratori	C30-C31,C37-C38.3,C39	282	1.01	0.55	0.29	111	0.95	0.93	0.52
Bone/Ossa	C40-C41	290	1.04	0.69	0.30	69	0.59	0.56	0.32
Conn and soft tissue sarcomas/Sarcomi conn e t molli	C47,C49	340	1.22	0.69	0.35	96	0.82	0.80	0.45
Skin/Pelle	C43-C44	1074	3.85	1.99	1.12	358	3.07	2.97	1.66
Breast/Mammella	C50	128	0.46	0.23	0.13	40	0.34	0.33	0.19
Prostate/Prostata	C61	7707	27.61	10.64	8.02	465	3.99	3.69	2.16
Testis/Testicolo	C62	90	0.32	0.24	0.09	37	0.32	0.32	0.17
Other genital/Altri genitali	C51-C52,C57,C60,C63	86	0.31	0.15	0.09	24	0.21	0.20	0.11
Bladder/Vescica	C67	4045	14.49	6.07	4.21	524	4.49	4.20	2.44
Kidney/Rene	C64-C66,C68	2115	7.58	3.59	2.20	531	4.55	4.35	2.47
Eye/Occhio	C69	74	0.27	0.13	0.08	17	0.15	0.14	0.08
Brain or nerves ben + mal/Cervello e sist nerv ben + mal	C70-C72	1854	6.64	3.93	1.93	792	6.79	6.59	3.68
Thyroid/Tiroide	C73	218	0.78	0.38	0.23	55	0.47	0.44	0.26
Hodgkin's disease/Morbo di Hodgkin	C81	202	0.72	0.43	0.21	67	0.57	0.57	0.31
Non-Hodgkin lymphoma/Linfomi Non-Hodgkin	C82-C85,C96	2296	8.22	4.10	2.39	610	5.23	5.05	2.84
Multiple myeloma/Mieloma multiplo	C88,C90	1510	5.41	2.39	1.57	277	2.38	2.25	1.29
Leukemia/Leucemie	C91-C95	3018	10.81	5.49	3.14	632	5.42	5.22	2.94
Other sites ben + mal/Altri benigni e maligni	Other/Altri	13104	46.94	21.29	13.63	2506	21.49	20.47	11.65
Total/Totale	C00-D48	96127	344.33	160.63	100.00	21515	184.51	175.33	100.00

Table 2 - Cancer death certification rates per 100,000 females, Italy, 2003, for various cancers or groups of cancers/Tassi di certificazione di morte per 100.000 donne, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	ICD-10	All ages/Tutte le età				Truncated/Troncato 35-64			
		Certified deaths N°	Crude rate	World standard rate	Certified deaths %	Certified deaths N°	Crude rate	World standard rate	Certified deaths %
Mouth or pharynx/Cavo orale e faringe	C00-C14	713	2.40	0.97	1.00	209	1.75	1.67	1.34
Esophagus/Esofago	C15	442	1.49	0.51	0.62	82	0.69	0.64	0.52
Stomach/Stomaco	C16	4643	15.64	5.04	6.54	736	6.16	5.90	4.71
Intestines (colon and rectum)/Intestino (colon e retto)	C17-C21,C26	9752	32.85	10.88	13.73	1697	14.20	13.30	10.85
Liver/Fegato	C22.0-C22.7	1329	4.48	1.54	1.87	194	1.62	1.50	1.24
Gallbladder and ducts/Colecisti e dotti	C23-C24	2039	6.87	2.24	2.87	312	2.61	2.37	2.00
Pancreas/Pancreas	C25	4503	15.17	5.12	6.34	755	6.32	5.77	4.83
Other digestive sites/Altri digerente	C48	249	0.84	0.34	0.35	63	0.53	0.50	0.40
Larynx/Laringe	C32	167	0.56	0.22	0.24	41	0.34	0.32	0.26
Lung/Polmone	C33	6431	21.66	8.60	9.06	1635	13.68	12.88	10.46
Pleura/Pleura	C38.4,C45.0	374	1.26	0.49	0.53	93	0.78	0.72	0.59
Other respiratory sites/Altri respiratori	C30-C31,C37-C38.3,C39	130	0.44	0.18	0.18	37	0.31	0.30	0.24
Bone/Ossa	C40-C41	199	0.67	0.39	0.28	36	0.30	0.29	0.23
Conn and soft tissue sarcomas/Sarcomi conn e t molli	C47,C49	347	1.17	0.61	0.49	129	1.08	1.04	0.83
Skin/Pelle	C43-C44	882	2.97	1.27	1.24	261	2.18	2.11	1.67
Breast/Mammella	C50	11461	38.61	17.11	16.14	4028	33.71	32.35	25.76
Uterus (cervix and corpus)/Utero (collo e corpo)	C53-C55,C58	2687	9.05	3.71	3.78	757	6.33	6.05	4.84
Ovary/Ovaio	C56-C57.4	3038	10.23	4.51	4.28	993	8.31	7.91	6.35
Other genital/Altri genitali	C51-C52,C57,C60,C63	642	2.16	0.65	0.90	77	0.64	0.59	0.49
Bladder/Vescica	C67	1071	3.61	0.96	1.51	78	0.65	0.61	0.50
Kidney/Rene	C64-C66,C68	1169	3.94	1.41	1.65	214	1.79	1.67	1.37
Eye/Occhio	C69	60	0.20	0.07	0.08	14	0.12	0.12	0.09
Brain or nerves ben + mal/Cervello e sist nerv ben + mal	C70-C72	1756	5.91	2.83	2.47	538	4.50	4.22	3.44
Thyroid/Tiroide	C73	333	1.12	0.40	0.47	61	0.51	0.49	0.39
Hodgkin's disease/Morbo di Hodgkin	C81	176	0.59	0.31	0.25	55	0.46	0.45	0.35
Non-Hodgkin lymphoma/Linfomi Non-Hodgkin	C82-C85,C96	2300	7.75	2.84	3.24	416	3.48	3.29	2.66
Multiple myeloma/Mieloma multiplo	C88,C90	1503	5.06	1.67	2.12	223	1.87	1.73	1.43
Leukemia/Leucemie	C91-C95	2543	8.57	3.40	3.58	457	3.82	3.63	2.92
Other sites ben + mal/Altri benigni e maligni	Other/Altri	10078	33.95	11.05	14.19	1445	12.09	11.35	9.24
Total/Totale	C00-D48	71017	239.22	89.32	100.00	15636	130.84	123.75	100.00

Results

The total number of certified cancer deaths in Italy rose to 167,144 in 2003 (96,127 men and 71,017 women) compared to 163,070 in 2002¹, with age-standardized rates of 160.63 and 89.32 per 100,000 inhabitants, respectively. The truncated 35-64 year rates showed a slight decline in males, with a rate of 175.33/100,000, and the number of certified deaths stabilized around 21,500, whereas in women the 35-64 age group showed a 2.2% rise in cancer death registrations since 2002, with 15,636 deaths giving a standardized rate of 123.75/100,000. Male lung cancer rates in the truncated 35-64 age group fell to 51.68/100,000, i.e., 2.3% since

2002, and 46.5% from the 96.7/100,000 peak registered in 1983. None the less, male lung cancer still accounted for about 30% of male cancer deaths in the 35-64 age group. Lung cancer in women was on par with 2002, showing standardized death rates of 8.60/100,000 and 12.88/100,000 in the all ages and truncated (35-64 years) age groups, respectively. Consistent with previous years, pleural cancer mortality remained stable at around 1.46/100,000 and 0.49/100,000 in men and women, respectively.

Among other major neoplasms, mortality was approximately stable for colorectum in both sexes (around 18/100,000 in men and 11/100,000 in women) and for female breast cancer (about

Table 3 - Age-specific cancer death certification rates per 100,000 males, Italy, 2003, for various cancers or groups of cancers/Tassi età-specifici di certificazione di morte per 100.000 uomini, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-Età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0.0	0.0	0.0	0.1	0.2	0.2	0.4	1.3	2.0	5.4	10.4	14.1	16.5	21.9	23.0	27.0	30.9	29.2
Esophagus/Esofago	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.8	2.1	3.9	8.5	11.7	14.6	22.2	24.7	27.3	27.8
Stomach/Stomaco	0.0	0.0	0.0	0.1	0.0	0.2	0.5	1.4	3.3	6.4	10.9	20.3	34.6	58.8	85.4	127.3	183.9	261.5
Intestines (colon and rectum) /Intestino (colon e retto)	0.0	0.0	0.0	0.0	0.1	0.6	0.9	1.5	4.6	9.7	20.4	33.0	60.7	99.0	149.2	221.6	328.7	424.4
Liver/Fegato	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.5	1.3	2.7	5.9	11.0	21.0	31.8	45.9	60.1	54.0	33.1
Gallbladder and ducts/ Colecisti e dotti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	2.1	3.9	7.1	12.5	18.5	27.2	37.9	52.1
Pancreas/Pancreas	0.0	0.0	0.0	0.1	0.1	0.0	0.2	1.0	1.8	5.0	10.2	19.6	31.3	48.2	58.5	76.8	102.4	103.8
Other digestive sites/ Altri digerente	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.3	0.4	1.2	1.2	1.4	3.0	4.3	4.6	3.2
Larynx/Laringe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	2.1	4.8	8.1	11.8	17.9	25.2	32.3	37.1	42.4
Lung/Polmone	0.0	0.0	0.0	0.1	0.2	0.2	0.7	2.0	7.4	19.6	50.7	107.0	186.6	275.3	422.9	562.9	582.8	471.5
Pleura/Pleura	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.9	2.3	3.0	7.1	8.8	10.3	15.9	18.1	25.2
Other respiratory sites/ Altri respiratori	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.4	0.3	1.0	0.8	1.3	2.3	3.1	3.2	4.6	4.6	3.8
Bone/Ossa	0.0	0.3	0.3	1.3	0.5	0.5	0.3	0.5	0.2	0.1	0.9	0.9	1.1	2.3	2.6	3.5	7.1	8.2
Conn and soft tissue sarcomas/Sarcomi conn e t molli	0.0	0.1	0.3	0.1	0.7	0.3	0.4	0.5	0.6	0.4	0.9	1.0	1.8	3.0	3.5	6.7	5.9	7.6
Skin/Pelle	0.0	0.0	0.0	0.0	0.1	0.3	0.9	1.2	1.5	1.7	3.7	4.2	7.6	8.5	13.0	17.0	18.5	40.1
Breast/Mammella	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.6	1.1	1.2	1.9	1.8	2.6	4.7
Prostate/Prostata	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.6	2.1	7.4	17.4	40.8	80.9	169.5	322.3	665.1
Testis/Testicolo	0.0	0.0	0.0	0.1	0.3	0.6	0.3	0.5	0.2	0.4	0.3	0.2	0.2	0.5	0.3	0.6	0.7	1.5
Other genital/Altri genitali	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.7	0.9	1.1	1.3	1.8	3.5
Bladder/Vescica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.5	3.2	9.4	16.4	32.1	55.7	93.8	133.7	216.4
Kidney/Rene	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.6	0.8	2.6	5.2	8.3	13.0	19.0	32.5	44.5	50.9	57.0
Eye/Occhio	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.7	0.5	1.4	1.5	1.8	2.3
Brain or nerves ben + mal/ Cervello e sist nerv ben + mal	0.8	0.6	0.6	0.6	0.9	0.6	1.2	1.9	3.1	4.9	7.6	11.3	15.5	17.7	20.7	25.8	26.7	18.7
Thyroid/Tiroide	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.4	1.1	1.2	2.3	3.7	3.9	4.8	4.7
Hodgkin's disease/Morbo di Hodgkin	0.0	0.0	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.5	0.7	0.7	1.2	1.2	2.3	3.6	3.1	3.2
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	0.0	0.3	0.3	0.4	0.6	0.8	1.1	1.7	2.0	3.6	5.3	8.7	13.0	20.7	31.0	46.0	54.7	58.2
Multiple myeloma/ Mieloma multiplo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	1.1	2.2	4.2	8.2	13.4	22.0	31.9	47.0	59.7
Leukemia/Leucemie	0.7	1.8	1.3	1.8	1.7	1.2	1.3	1.7	2.4	3.2	5.0	7.7	15.6	21.8	39.1	60.0	86.0	111.7
Other sites ben + mal/ Altri benigni e maligni	1.2	1.1	0.3	0.9	0.4	1.2	1.6	2.8	4.6	11.0	22.2	39.3	63.8	107.9	175.3	271.1	398.4	579.1
Total/Totale	2.9	4.2	3.3	6.1	6.5	7.5	11.5	21.0	39.9	87.9	183.2	336.2	570.4	887.0	1354.4	1967.1	2578.3	3319.6

17/100,000). Pancreatic cancer also remained stable in men for both age groups, but confirmed its rising trend in women, 5.12 and 5.77/100,000 in all ages and truncated age groups, respectively. Prostate cancer mortality appeared to be increasing at 10.64/100,000 for all ages, but remained stable in the truncated (35-64 years) age group at 3.69/100,000. Favorable trends persisted for cancer of the uterus (cervix), showing rates of 3.71 and 6.05/100,000 for all ages and trun-

cated age groups, respectively. Stomach cancer also confirmed its favorable trend in both sexes, with rates of 10.43/100,000 and 5.04/100,000 for all ages in men and women, respectively. Declining mortality trends were also observed in leukemia (5.49/100,000 and 3.40/100,000 for all ages in men and women, respectively) and Hodgkin's disease (0.43/100,000 and 0.31/100,000 for all ages in men and women, respectively).

Table 4 - Age-specific cancer death certification rates per 100,000 females, Italy, 2003, for various cancers or groups of cancers/Tassi età-specifici di certificazione di morte per 100.000 donne, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.7	1.7	1.7	3.0	3.6	4.0	4.1	7.3	11.1	18.4
Esophagus/Esofago	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.5	1.0	2.3	2.5	4.5	4.2	7.7	13.6
Stomach/Stomaco	0.0	0.0	0.0	0.1	0.1	0.4	0.6	2.0	3.0	4.9	6.8	8.8	13.5	21.4	34.4	58.1	89.8	154.5
Intestines (colon and rectum)/ Intestino (colon e retto)	0.0	0.0	0.0	0.0	0.1	0.2	1.0	2.3	3.6	9.2	15.6	24.3	36.6	51.5	75.2	120.4	182.0	300.3
Liver/Fegato	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	1.5	2.4	5.6	9.8	16.1	21.3	25.8	19.2
Gallbladder and ducts/ Colecisti e dotti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1	2.2	4.9	8.8	12.5	20.1	26.5	38.0	54.5
Pancreas/Pancreas	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.3	2.4	5.6	11.9	19.4	29.2	44.1	61.4	81.3	107.7
Other digestive sites/ Altri digerente	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.2	0.8	0.7	1.3	1.8	2.9	2.9	4.2	3.1
Larynx/Laringe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.8	0.6	1.1	1.8	2.1	2.2	3.4
Lung/Polmone	0.0	0.0	0.1	0.1	0.1	0.2	0.4	1.5	4.4	9.4	15.9	24.1	32.9	46.8	66.0	83.6	98.2	98.0
Pleura/Pleura	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.4	0.8	1.4	2.0	2.9	2.9	5.6	6.5	5.2
Other respiratory sites/ Altri respiratori	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.3	0.4	0.6	0.7	0.8	1.9	2.2	2.0
Bone/Ossa	0.1	0.2	0.2	0.9	0.2	0.3	0.1	0.1	0.1	0.4	0.3	0.4	0.6	1.1	1.5	2.2	2.8	3.5
Conn and soft tissue sarcomas/Sarcomi conn e t molli	0.1	0.2	0.2	0.1	0.1	0.3	0.1	0.5	0.6	0.8	1.3	1.7	1.9	1.7	2.5	3.2	2.8	6.8
Skin/Pelle	0.1	0.0	0.0	0.1	0.3	0.4	0.8	1.1	1.9	1.5	2.3	2.6	4.2	4.0	5.2	7.9	10.2	27.2
Breast/Mammella	0.0	0.1	0.0	0.0	0.1	0.7	3.5	7.7	17.9	27.6	40.3	52.1	68.4	73.3	84.6	112.6	146.4	211.2
Uterus (cervix and corpus)/ Utero (collo e corpo)	0.0	0.0	0.0	0.0	0.1	0.0	0.8	1.5	2.8	5.4	6.8	10.5	13.4	19.0	23.0	28.4	41.2	51.0
Ovary/Ovaio	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.3	2.8	6.6	10.7	12.6	19.3	24.0	28.7	33.7	38.8	38.5
Other genital/Altri genitali	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.5	1.0	2.1	3.5	4.5	7.4	13.5	23.4
Bladder/Vescica	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.3	0.7	0.9	2.0	4.3	8.2	13.0	24.9	43.6
Kidney/Rene	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.3	0.2	1.1	2.2	3.1	4.6	7.7	9.6	16.0	22.0	26.8
Eye/Occhio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.3	0.3	0.7	0.9	2.0
Brain or nerves ben + mal/ Cervello e sist nerv ben + mal	0.5	0.6	0.9	0.5	0.3	0.7	1.1	1.2	1.8	2.5	4.7	7.4	11.2	13.4	14.8	19.4	23.1	21.8
Thyroid/Tiroide	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.0	1.1	2.4	2.7	4.6	5.3	8.5
Hodgkin's disease/Morbo di Hodgkin	0.0	0.1	0.1	0.0	0.5	0.1	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.8	0.9	1.8	2.6	2.5
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	0.2	0.1	0.2	0.1	0.6	0.3	0.4	1.4	1.2	2.4	3.4	5.7	8.1	14.7	23.2	31.6	46.5	40.6
Multiple myeloma/ Mieloma multiplo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	2.3	2.9	5.7	9.7	15.9	20.4	28.4	36.2
Leukemia/Leucemie	0.7	0.8	0.9	1.1	0.9	1.0	1.4	1.4	1.9	2.6	3.7	6.2	8.4	14.1	21.4	30.8	44.9	63.1
Other sites ben + mal/ Altri benigni e maligni	1.3	0.8	0.5	0.2	0.7	0.9	1.5	2.3	4.2	7.6	12.6	19.5	31.6	50.3	80.9	134.2	192.0	318.1
Total/Totale	3.1	3.0	3.0	3.6	4.3	6.3	13.7	26.9	51.0	92.1	145.1	212.1	310.5	428.8	600.9	863.3	1195.5	1704.8

Discussion

Transition to the 10th revision of the ICD in Italian mortality reporting has introduced changes in trends for several cancer sites and should be examined with care, even though the major transition to automatic cause of death reporting with the National Center for Health Statistics' (NCHS) Micar-Acme system was introduced in 1995⁸. From bridge studies between ICD-9 and ICD-10 per-

formed on US, UK and Spanish mortality data, it is apparent that cancer deaths are comparable⁹⁻¹². The main structural difference follows from the new encoding rule that states that when pneumonia is a consequence of a different pathology, the latter should be recorded as the cause. Consequentially, some cancer sites such as prostate and female breast cancer may have risen¹¹.

In a preliminary presentation of results from an Italian comparability bridge study, it was apparent that colorec-

Table 5 - Number of registered deaths from various cancers or groups of cancers in males, Italy, 2003, for various cancers or groups of cancers/Numero di certificazioni di morte per diversi tumori o gruppi di tumori negli uomini, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-Età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0	0	0	1	4	5	10	30	43	104	192	245	268	320	288	254	169	100
Esophagus/Esofago	0	0	0	0	0	0	4	6	18	41	72	147	191	213	278	232	149	95
Stomach/Stomaco	0	0	0	1	0	4	12	33	71	123	200	351	563	859	1068	1197	1005	894
Intestines (colon and rectum)/ Intestino (colon e retto)	0	0	0	0	2	12	20	37	98	185	375	571	987	1447	1866	2084	1797	1451
Liver/Fegato	0	0	0	1	0	0	5	11	28	52	109	191	342	465	574	565	295	113
Gallbladder and ducts/ Colecisti e dotti	0	0	0	0	0	0	1	1	7	14	38	68	115	183	231	256	207	178
Pancreas/Pancreas	0	0	0	1	2	1	4	23	38	95	188	340	509	705	731	722	560	355
Other digestive sites/ Altri digerente	0	0	0	0	0	2	4	3	3	5	7	20	20	21	38	40	25	11
Larynx/Laringe	0	0	0	0	0	0	0	3	20	41	88	140	192	261	315	304	203	145
Lung/Polmone	0	0	0	1	3	5	15	48	159	376	931	1854	3036	4025	5288	5294	3186	1612
Pleura/Pleura	1	0	0	0	0	0	3	4	5	18	43	52	116	128	129	150	99	86
Other respiratory sites/ Altri respiratori	0	0	0	1	0	2	2	10	7	19	15	22	38	45	40	43	25	13
Bone/Ossa	0	4	5	20	9	10	6	12	5	1	17	16	18	34	33	33	39	28
Conn and soft tissue sarcomas/Sarcomi conn e t molli	0	1	4	2	12	6	10	11	13	8	17	17	30	44	44	63	32	26
Skin/Pelle	0	0	0	0	2	7	21	29	32	33	68	73	123	125	163	160	101	137
Breast/Mammella	0	0	0	0	0	0	0	1	4	3	4	10	18	17	24	17	14	16
Prostate/Prostata	1	0	0	1	2	0	0	0	3	12	39	128	283	597	1011	1594	1762	2274
Testis/Testicolo	0	0	0	2	5	12	8	13	5	7	6	3	3	7	4	6	4	5
Other genital/ Altri genitali	0	0	0	0	0	1	0	1	0	2	4	5	12	13	14	12	10	12
Bladder/Vescica	0	0	0	0	0	1	1	2	7	28	58	163	266	470	696	882	731	740
Kidney/Rene	0	2	0	1	0	1	4	14	17	50	95	144	211	278	406	419	278	195
Eye/Occhio	0	0	0	1	0	0	0	1	0	1	4	0	11	7	17	14	10	8
Brain or nerves ben + mal/Cervello e sist nerv ben + mal	11	8	9	9	15	12	27	46	67	93	139	195	252	259	259	243	146	64
Thyroid/Tiroide	0	0	0	0	1	1	3	2	4	2	8	19	20	33	46	37	26	16
Hodgkin's disease/ Morbo di Hodgkin	0	0	1	3	5	7	10	7	6	10	13	12	19	18	29	34	17	11
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	0	4	5	6	10	16	25	41	43	68	97	150	211	302	387	433	299	199
Multiple myeloma/ Mieloma multiplo	0	0	0	0	0	0	1	6	3	21	41	73	133	196	275	300	257	204
Leukemia/Leucemie	9	24	19	26	29	24	31	40	52	61	92	134	253	319	489	564	470	382
Other sites ben + mal/ Altri benigni e maligni	17	15	5	13	7	25	38	68	100	211	408	681	1038	1578	2192	2550	2178	1980
Total/Totale	39	58	48	90	108	154	265	503	858	1684	3368	5824	9278	12969	16935	18502	14094	11350

tal cancer mortality classification was affected by a combination of deaths moving to other sites, and possibly the classification of pneumonia and other digestive sites cancers as colorectal cancers, which may in turn explain the relative stability of death rates from this major cancer sites' death rates in spite of these changes in classification¹³. The fall in cancer deaths from "other digestive sites" that are cancers of the peritoneum and retro-peri-

toneum is only partly explained by the introduction of the new cause of death mesothelioma of the peritoneum, but it does not justify the 68% and 74% fall from one year to the next in males and females, respectively. The move to ICD-10 also seems to have brought a rise in bone cancer (ICD-10 C40-C41) mainly in the elderly (over 65 years of age). Deaths from skin cancer are also affected by the encoding change, since some deaths

Table 6 - Number of registered deaths from various cancers or groups of cancers in females, Italy, 2003, for various cancers or groups of cancers/Numero di certificazioni di morte per diversi tumori o gruppi di tumori nelle donne, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-Età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0	0	0	0	0	3	5	9	16	33	32	55	64	68	65	101	109	153
Esophagus/Esofago	0	0	0	0	0	0	0	2	2	10	10	18	40	42	71	58	76	113
Stomach/Stomaco	0	0	0	1	1	8	13	47	65	96	129	159	240	360	546	807	883	1288
Intestines (colon and rectum)/ Intestino (colon e retto)	0	0	0	0	2	4	23	55	77	179	296	441	649	866	1193	1674	1790	2503
Liver/Fegato	1	0	0	0	0	1	2	2	3	19	28	43	99	165	256	296	254	160
Gallbladder and ducts/ Colecisti e dotti	0	0	0	0	0	0	1	0	5	21	42	88	156	210	319	369	374	45
Pancreas/Pancreas	0	0	0	0	0	1	5	14	28	46	107	216	344	491	700	853	800	898
Other digestive sites/ Altri digerente	0	0	0	1	0	1	0	4	4	4	15	13	23	31	46	40	41	26
Larynx/Laringe	0	0	0	0	0	0	0	0	2	2	12	14	11	19	28	29	22	28
Lung/Polmone	0	0	1	2	1	4	10	36	95	183	301	437	583	786	1047	1162	966	817
Pleura/Pleura	0	0	0	1	0	0	1	2	5	8	16	26	36	48	46	78	64	43
Other respiratory sites/ Altri respiratori	0	0	0	0	0	1	2	3	3	7	6	8	10	12	13	26	22	17
Bone/Ossa	1	2	3	13	4	6	3	3	3	7	5	7	11	19	24	31	28	29
Conn and soft tissue sarcomas/Sarcomi conn e t molli	1	3	3	2	2	7	3	12	14	15	24	30	34	28	39	45	28	57
Skin/Pelle	1	0	0	1	5	8	19	25	40	30	43	48	75	68	82	110	100	227
Breast/Mammella	0	1	0	0	1	14	79	182	386	537	764	946	1213	1231	1342	1565	1440	1760
Uterus (cervix and corpus)/ Utero (collo e corpo)	0	0	0	0	1	1	19	36	60	105	128	190	238	320	364	395	405	425
Ovary/Ovaio	0	0	0	0	0	4	11	30	60	128	203	229	343	403	455	469	382	321
Other genital/Altri genitali	0	0	0	0	0	0	3	3	3	5	10	18	38	59	72	103	133	195
Bladder/Vescica	0	0	0	0	1	0	0	2	5	6	13	16	36	73	130	181	245	363
Kidney/Rene	1	3	0	1	1	2	3	7	4	22	42	57	82	130	153	222	216	223
Eye/Occhio	0	0	0	0	0	0	1	3	2	3	0	3	3	5	4	10	9	17
Brain or nerves ben + mal/Cervello e sist nerv ben + mal	7	8	12	7	5	15	26	29	38	48	90	135	198	225	234	270	227	182
Thyroid/Tiroide	0	0	0	0	0	0	1	0	6	9	9	18	19	41	43	64	52	71
Hodgkin's disease/Morbo di Hodgkin	0	1	1	0	8	3	7	10	8	7	8	11	11	14	15	25	26	21
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	2	1	3	2	10	7	10	32	25	47	65	104	143	247	368	439	457	338
Multiple myeloma/ Mieloma multiplo	0	0	0	0	0	0	0	2	8	17	43	52	101	163	252	284	279	302
Leukemia/Leucemie	9	10	12	16	15	20	31	32	42	50	71	113	149	237	340	428	442	526
Other sites ben + mal/ Altri benigni e maligni	17	10	7	3	12	18	33	55	90	148	239	353	560	845	1283	1865	1889	2651
Total/Totale	40	39	42	50	69	128	311	637	1099	1792	2751	3848	5509	7206	9530	11999	11759	14208

have migrated to the more general "malignant neoplasms of independent (primary) multiple sites" (ICD-10 C97)¹¹. Cancers of the lymphoid hemopoietic and relative tissues that include neoplasms classified from ICD-10 C81 to C96, underwent a rise in deaths mainly attributable to deaths previously recorded as pneumonia, but also due to deaths that were previously classified as endocrine, nutritional and metabolic diseases. Within this

group of neoplasms, mortality from multiple myeloma is the most affected, in that (in addition to the aforementioned changes) all deaths previously recorded as "plasma cell neoplasms of uncertain behavior" (ICD-9 238.6) are now coded to this cancer, explaining the sudden rise in mortality seen in both sexes and age groups.

As a result of the restructured ICD-10 tumor coding procedures, the cancer grouping of "all other neo-

Table 7 - Percentage of all cancer deaths in males, Italy, 2003, for various cancers or groups of cancers/Percentuale di tutte le morti per tumore negli uomini, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-Età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0.0	0.0	0.0	1.1	3.7	3.2	3.8	6.0	5.0	6.2	5.7	4.2	2.9	2.5	1.7	1.4	1.2	0.9
Esophagus/Esofago	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.2	2.1	2.4	2.1	2.5	2.1	1.6	1.6	1.3	1.1	0.8
Stomach/Stomaco	0.0	0.0	0.0	1.1	0.0	2.6	4.5	6.6	8.3	7.3	5.9	6.0	6.1	6.6	6.3	6.5	7.1	7.9
Intestines (colon and rectum)/ Intestino (colon e retto)	0.0	0.0	0.0	0.0	1.9	7.8	7.5	7.4	11.4	11.0	11.1	9.8	10.6	11.2	11.0	11.3	12.8	12.8
Liver/Fegato	0.0	0.0	0.0	1.1	0.0	0.0	1.9	2.2	3.3	3.1	3.2	3.3	3.7	3.6	3.4	3.1	2.1	1.0
Gallbladder and ducts/ Colecisti e dotti	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.8	0.8	1.1	1.2	1.2	1.4	1.4	1.4	1.5	1.6
Pancreas/Pancreas	0.0	0.0	0.0	1.1	1.9	0.6	1.5	4.6	4.4	5.6	5.6	5.8	5.5	5.4	4.3	3.9	4.0	3.1
Other digestive sites/ Altri digerente	0.0	0.0	0.0	0.0	0.0	1.3	1.5	0.6	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1
Larynx/Laringe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.3	2.4	2.6	2.4	2.1	2.0	1.9	1.6	1.4	1.3
Lung/Polmone	0.0	0.0	0.0	1.1	2.8	3.2	5.7	9.5	18.5	22.3	27.6	31.8	32.7	31.0	31.2	28.6	22.6	14.2
Pleura/Pleura	2.6	0.0	0.0	0.0	0.0	0.0	1.1	0.8	0.6	1.1	1.3	0.9	1.3	1.0	0.8	0.8	0.7	0.8
Other respiratory sites/ Altri respiratori	0.0	0.0	0.0	1.1	0.0	1.3	0.8	2.0	0.8	1.1	0.4	0.4	0.4	0.3	0.2	0.2	0.2	0.1
Bone/Ossa	0.0	6.9	10.4	22.2	8.3	6.5	2.3	2.4	0.6	0.1	0.5	0.3	0.2	0.3	0.2	0.2	0.3	0.2
Conn and soft tissue sarcomas/Sarcomi conn e t molli	0.0	1.7	8.3	2.2	11.1	3.9	3.8	2.2	1.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Skin/Pelle	0.0	0.0	0.0	0.0	1.9	4.5	7.9	5.8	3.7	2.0	2.0	1.3	1.3	1.0	1.0	0.9	0.7	1.2
Breast/Mammella	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Prostate/Prostata	2.6	0.0	0.0	1.1	1.9	0.0	0.0	0.0	0.3	0.7	1.2	2.2	3.1	4.6	6.0	8.6	12.5	20.0
Testis/Testicolo	0.0	0.0	0.0	2.2	4.6	7.8	3.0	2.6	0.6	0.4	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Other genital/ Altri genitali	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bladder/Vescica	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.4	0.8	1.7	1.7	2.8	2.9	3.6	4.1	4.8	5.2	6.5
Kidney/Rene	0.0	3.4	0.0	1.1	0.0	0.6	1.5	2.8	2.0	3.0	2.8	2.5	2.3	2.1	2.4	2.3	2.0	1.7
Eye/Occhio	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Brain or nerves ben + mal/Cervello e sist nerv ben + mal	28.2	13.8	18.8	10.0	13.9	7.8	10.2	9.1	7.8	5.5	4.1	3.3	2.7	2.0	1.5	1.3	1.0	0.6
Thyroid/Tiroide	0.0	0.0	0.0	0.0	0.9	0.6	1.1	0.4	0.5	0.1	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.1
Hodgkin's disease/ Morbo di Hodgkin	0.0	0.0	2.1	3.3	4.6	4.5	3.8	1.4	0.7	0.6	0.4	0.2	0.2	0.1	0.2	0.2	0.1	0.1
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	0.0	6.9	10.4	6.7	9.3	10.4	9.4	8.2	5.0	4.0	2.9	2.6	2.3	2.3	2.3	2.3	2.1	1.8
Multiple myeloma/ Mieloma multiplo	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.2	0.3	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.8	1.8
Leukemia/Leucemie	23.1	41.4	39.6	28.9	26.9	15.6	11.7	8.0	6.1	3.6	2.7	2.3	2.7	2.5	2.9	3.0	3.3	3.4
Other sites ben + mal/ Altri benigni e maligni	43.6	25.9	10.4	14.4	6.5	16.2	14.3	13.5	11.7	12.5	12.1	11.7	11.2	12.2	12.9	13.8	15.5	17.4
Total/Totale	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

plasms, both malignant and benign” rose sharply because “malignant neoplasms of independent (primary) multiple sites” (ICD-10 C97) included deaths from a myriad of other cancers, since when two primary sites are recorded on a death certificate they are not classified as the first written cause but as C97⁹. Given these changes in classification and the stricter age standardization categories, the present rates for several cancers should only be compared to those previously published

upon careful inspection of age-specific death rates with special care in taking into account the issues brought about by the change of ICD.

The observed rise in absolute numbers of registered cancer deaths is due to population ageing, in that the all ages standardized rates were stable in both sexes.

The fall in male rates is the result of a long-term trend driven by tobacco-related neoplasms that started in the late 1980s due to the fall in male smoking prevalence

Table 8 - Percentage of all cancer deaths in females, Italy, 2003, for various cancers or groups of cancers/Percentuale di tutte le morti per tumore nelle donne, Italia, 2003, per vari tumori o gruppi di tumori

Cancer/Tumore	Age-Età																	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Mouth or pharynx/ Cavo orale e faringe	0.0	0.0	0.0	0.0	0.0	2.3	1.6	1.4	1.5	1.8	1.2	1.4	1.2	0.9	0.7	0.8	0.9	1.1
Esophagus/Esofago	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.6	0.4	0.5	0.7	0.6	0.7	0.5	0.6	0.8
Stomach/Stomaco	0.0	0.0	0.0	2.0	1.4	6.3	4.2	7.4	5.9	5.4	4.7	4.1	4.4	5.0	5.7	6.7	7.5	9.1
Intestines (colon and rectum)/ Intestino (colon e retto)	0.0	0.0	0.0	0.0	2.9	3.1	7.4	8.6	7.0	10.0	10.8	11.5	11.8	12.0	12.5	14.0	15.2	17.6
Liver/Fegato	2.5	0.0	0.0	0.0	0.0	0.8	0.6	0.3	0.3	1.1	1.0	1.1	1.8	2.3	2.7	2.5	2.2	1.1
Gallbladder and ducts/ Colecisti e dotti	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.5	1.2	1.5	2.3	2.8	2.9	3.3	3.1	3.2	3.2
Pancreas/Pancreas	0.0	0.0	0.0	0.0	0.0	0.8	1.6	2.2	2.5	2.6	3.9	5.6	6.2	6.8	7.3	7.1	6.8	6.3
Other digestive sites/ Altri digerente	0.0	0.0	0.0	2.0	0.0	0.8	0.0	0.6	0.4	0.2	0.5	0.3	0.4	0.4	0.5	0.3	0.3	0.2
Larynx/Laringe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.4	0.2	0.3	0.3	0.2	0.2	0.2
Lung/Polmone	0.0	0.0	2.4	4.0	1.4	3.1	3.2	5.7	8.6	10.2	10.9	11.4	10.6	10.9	11.0	9.7	8.2	5.8
Pleura/Pleura	0.0	0.0	0.0	2.0	0.0	0.0	0.3	0.3	0.5	0.4	0.6	0.7	0.7	0.7	0.5	0.7	0.5	0.3
Other respiratory sites/ Altri respiratori	0.0	0.0	0.0	0.0	0.0	0.8	0.6	0.5	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
Bone/Ossa	2.5	5.1	7.1	26.0	5.8	4.7	1.0	0.5	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2
Conn and soft tissue sarcomas/Sarcomi conn e t molli	2.5	7.7	7.1	4.0	2.9	5.5	1.0	1.9	1.3	0.8	0.9	0.8	0.6	0.4	0.4	0.4	0.2	0.4
Skin/Pelle	2.5	0.0	0.0	2.0	7.2	6.3	6.1	3.9	3.6	1.7	1.6	1.2	1.4	0.9	0.9	0.9	0.9	1.6
Breast/Mammella	0.0	2.6	0.0	0.0	1.4	10.9	25.4	28.6	35.1	30.0	27.8	24.6	22.0	17.1	14.1	13.0	12.2	12.4
Uterus (cervix and corpus)/ Utero (collo e corpo)	0.0	0.0	0.0	0.0	1.4	0.8	6.1	5.7	5.5	5.9	4.7	4.9	4.3	4.4	3.8	3.3	3.4	3.0
Ovary/Ovaio	0.0	0.0	0.0	0.0	0.0	3.1	3.5	4.7	5.5	7.1	7.4	6.0	6.2	5.6	4.8	3.9	3.2	2.3
Other genital/Altri genitali	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.3	0.3	0.4	0.5	0.7	0.8	0.8	0.9	1.1	1.4
Bladder/Vescica	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.3	0.5	0.3	0.5	0.4	0.7	1.0	1.4	1.5	2.1	2.6
Kidney/Rene	2.5	7.7	0.0	2.0	1.4	1.6	1.0	1.1	0.4	1.2	1.5	1.5	1.5	1.8	1.6	1.9	1.8	1.6
Eye/Occhio	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Brain or nerves ben + mal/ Cervello e sist nerv ben + mal	17.5	20.5	28.6	14.0	7.2	11.7	8.4	4.6	3.5	2.7	3.3	3.5	3.6	3.1	2.5	2.3	1.9	1.3
Thyroid/Tiroide	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.5	0.5	0.3	0.5	0.3	0.6	0.5	0.5	0.4	0.5
Hodgkin's disease/ Morbo di Hodgkin	0.0	2.6	2.4	0.0	11.6	2.3	2.3	1.6	0.7	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
Non-Hodgkin lymphoma/ Linfomi Non-Hodgkin	5.0	2.6	7.1	4.0	14.5	5.5	3.2	5.0	2.3	2.6	2.4	2.7	2.6	3.4	3.9	3.7	3.9	2.4
Multiple myeloma/ Mieloma multiplo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.9	1.6	1.4	1.8	2.3	2.6	2.4	2.4	2.1
Leukemia/Leucemie	22.5	25.6	28.6	32.0	21.7	15.6	10.0	5.0	3.8	2.8	2.6	2.9	2.7	3.3	3.6	3.6	3.8	3.7
Other sites ben + mal/ Altri benigni e maligni	42.5	25.6	16.7	6.0	17.4	14.1	10.6	8.6	8.2	8.3	8.7	9.2	10.2	11.7	13.5	15.5	16.1	18.7
Total/Totale	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

over the last four decades¹⁴. Nonetheless, considering that this cancer alone was responsible for over one quarter of male cancer deaths and nearly a third of those in the truncated 35-64 age group, the importance of further reducing smoking prevalence in young and middle-aged Italian males cannot be overstated. In women, mortality from this cancer site remains stable, influenced by the female smoking epidemic that started in 1970s¹⁴.

As in previous years, pleural cancer mortality remained more or less constant, suggesting that the asbestos-related pleural cancer epidemic has begun to level off in Italy¹⁵. However, since pleural cancer includes a variable proportion of misclassified lung cancers, the recent more favorable trends may, at least in part, be influenced by the fall in male lung cancer.

The apparent increase in prostate mortality in the all-ages group is mainly confined to older men and could

be partly due to the adoption of a stricter standardization and the change in ICD.

The consistent fall in mortality from uterine cancer was confirmed by the latest data and was most probably due to further widespread adoption of cervical screening¹⁶. Similarly, stomach cancer mortality continued the favorable trends that were previously observed and were probably due to a more varied and nutrient rich diet, better food conservation and control of *Helicobacter pylori* infections as well as to reduced tobacco smoking in men¹⁷. Some persistent falls amenable to therapy were also observed in other neoplasms, such as leukemia and Hodgkin's disease^{18,19}.

In conclusion, Italy's mostly favorable cancer mortality trends are largely confirmed, as is the need to keep up and develop more focused alcohol and tobacco-control strategies and education towards proper nutrition and diet regimes, as well as the avoidance of excessive sun exposure and early diagnosis policies for select neoplasms such as cervix, breast, colorectum and possibly prostate.

References

1. Malvezzi M, Bosetti C, Negri E, La Vecchia C: Cancer mortality in Italy, 1970-2002. *Tumori*, 94: 640-657, 2008.
2. World Health Organization: International Classification of Disease: 9th revision. Geneva, 1977.
3. World Health Organization: International statistical classification of disease and related health problems, 10th revision. Geneva, 1992.
4. Decarli A, La Vecchia C, Cislaghi C, Negri E: Cancer mortality in Italy, 1994, and an overview of trends from 1955 to 1994. *Tumori*, 84: 312-334, 1998.
5. Negri E, La Vecchia C, Decarli A: Cancer mortality in Italy, 1998. *Tumori*, 88: 89-94, 2002.
6. Negri E, La Vecchia C, Decarli A: Cancer mortality in Italy, 1997: quantifying the fall in rates in women and men. *Tumori*, 87: 290-298, 2001.
7. World Health Organization Statistical Information System: WHO mortality database. Available at <http://www3.who.int/whosis/menu.cfm>, 2007 (accessed November 2009).
8. Frova L, Marchetti S, Pace M: La codifica automatica delle cause di morte in Italia: Istituto Nazionale di Statistica 2005.
9. Anderson RN, Minino AM, Hoyert DL, Rosenberg HM: Comparability of cause of death between ICD-9 and ICD-10: preliminary estimates. *Natl Vital Stat Rep*, 49: 1-32, 2001.
10. Anderson RN, Rosenberg HM: Disease classification: measuring the effect of the Tenth Revision of the International Classification of Diseases on cause-of-death data in the United States. *Stat Med*, 22: 1551-1570, 2003.
11. Brock A, Griffiths C, Rooney C: The effect of the introduction of ICD-10 on cancer mortality trends in England and Wales. *Health Stat Q*: 7-17, 2004.
12. Cirera Suarez L, Rodriguez Barranco M, Madrigal de Torres E, Carrillo Prieto J, Hasiak Santo A, Augusto Becker R, Tobias Garces A, Sanchez Carmen N: Correspondences from 10th to 9th Revision of the International Classification of Diseases in the causes of death lists of the National Institute of Statistics and the Regional Health Authority of Murcia in Spain. *Rev Esp Salud Publica*, 80: 157-175, 2006.
13. Pace M, Bruzzzone S, Frova L: Bridge coding study in Italy following ICD-9 to ICD-10 transition: evidences and international comparisons EAPS - Workshop on Individual area and group variation in morbidity and mortality 2007.
14. Gallus S, Pacifici R, Colombo P, Scarpino V, Zuccaro P, Bosetti C, Fernandez E, Apolone G, La Vecchia C: Prevalence of smoking and attitude towards smoking regulation in Italy, 2004. *Eur J Cancer Prev*, 15: 77-81, 2006.
15. Pelucchi C, Malvezzi M, La Vecchia C, Levi F, Decarli A, Negri E: The mesothelioma epidemic in western Europe: an update. *Br J Cancer*, 90: 1022-1024, 2004.
16. Boyle P, Autier P, Bartelink H, Baselga J, Boffetta P, Burn J, Burns HJG, Christensen L, Denis L, Dicato M, Diehl V, Doll R, Franceschi S., Gillis CR, Gray N, Griciute L, Hackshaw A, Kasler M, Kogevinas M, Kvinnsland S, La Vecchia C, Levi F, McVie JG, Maisonneuve P, Martin-Moreno JM, Newton Bishop J, Oleari F, Perrin P, Quinn M, Richards M, Ringborg U, Scully C, Siracka E, Storm H, Tubiana M, Tursz T, Veronesi U, Wald N, Weber W, Zaridze DG, Zatonski W, zur Hausen H: European Code Against Cancer and scientific justification: third version (2003). *Ann Oncol*, 14: 973-1005, 2003.
17. Shibata A, Personnet J: Stomach cancer. In: *Cancer Epidemiology and Prevention*, Schottenfeld D, Fraumeni JF, Jr. (Eds), pp 659-673, Oxford University Press, New York, 2006.
18. Garattini S, La Vecchia C: Perspectives in cancer chemotherapy. *Eur J Cancer*, 37 Suppl 8: S128-147, 2001.
19. Levi F, Lucchini F, Negri E, Barbui T, La Vecchia C: Trends in mortality from leukemia in subsequent age groups. *Leukemia*, 14: 1980-1985, 2000.